

GEORGIA INSTITUTE OF TECHNOLOGY  
OFFICE OF CONTRACT ADMINISTRATION  
SPONSORED PROJECT INITIATION

Date: July 10, 1978

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all

Project Title: New Methods for Biomedical Research

Project No: G-33-D03

Project Director: Dr. Nai-Teng Yu

Sponsor: DHEW/PHS/NIH National Eye Institute (Research Career Development Program)

Agreement Period: From 7/1/78 Until 6/30/79 (03 year)

Type Agreement: Grant No. 5-K04-EY00073-03

Amount: \$33,067

Reports Required: Annual Progress Reports with continuation applications;  
Terminal Progress Report upon Grant expiration

Sponsor Contact Person (s):

Technical Matters

Herbert Yellin, PH.D.  
Extramural Program Director  
Cataract Program  
National Eye Institute  
Bethesda, MD 20014

Contractual Matters

(thru OCA)

Ave M. Connors  
Grants Management Contact  
Extramural Services Branch  
National Eye Institute  
Bethesda, MD 20014

Phone: 301-496-5884

NOTE: FOLLOW-ON PROJECT TO G-33-D02 (02 YEAR)

Defense Priority Rating: None

Assigned to: Chemistry (School/Laboratory)

COPIES TO:

Project Director  
Division Chief (EES)  
School/Laboratory Director  
Dean/Director-EES  
Accounting Office  
Procurement Office  
Security Coordinator (OCA)  
Reports Coordinator (OCA)

Library, Technical Reports Section  
EES Information Office  
EES Reports & Procedures  
Project File (OCA)  
Project Code (GTRI)  
Other

GEORGIA INSTITUTE OF TECHNOLOGY  
OFFICE OF CONTRACT ADMINISTRATION  
SPONSORED PROJECT TERMINATION

Date: Septmeber 6, 1979

Project Title: New Methods for Biomedical Research

Project No: G-33-D03

Project Director: Dr. Nai-Teng Yu

Sponsor: DHEW/PHS/NIH National Eye Institute (Research Career Development Program)

Effective Termination Date: 6/30/79 (03 year)

Clearance of Accounting Charges: 6/30/79

Grant/Contract Closeout Actions Remaining:

- ☐ Final Invoice and Closing Documents
- ☐ Final Fiscal Report
- ☐ Final Report of Inventions
- ☐ Govt. Property Inventory & Related Certificate
- ☐ Classified Material Certificate
- ☒ Other Annual Report of Expenditures (03 year) due no later than 9/30/79.

NOTE: FOLLOW-ON PROJECT IS G-33-D04 (04 YEAR).

Assigned to: Chemistry (School/Laboratory)

COPIES TO:

Project Director  
Division Chief (EES)  
School/Laboratory Director  
Dean/Director-EES  
Accounting Office  
Procurement Office  
Security Coordinator (OCA)  
Reports Coordinator (OCA)

Research Property Coordinator (OCA)

Library, Technical Reports Section  
EES Information Office  
Project File (OCA)  
Project Code (GTRI)  
Other \_\_\_\_\_

		GRANT NUMBER	
PROGRESS REPORT		5 K04 EY 00073-04	
NAME OF HEAD OF DEPARTMENT OR DEPARTMENTAL SUBDIVISION		ACCOMPLISHMENTS COVERING PERIOD	
J. A. Bertrand		FROM	THROUGH
NAME OF Awardee		July 1, 1979	June 30, 1980
Nai-Teng Yu			
INSTITUTION			
Georgia Institute of Technology			
TITLE OF RESEARCH PROPOSAL (REPEAT TITLE SHOWN ON PAGE 1)			
New Methods for Biomedical Research			
STATEMENT OF ACCOMPLISHMENT (IF SPACE IS INADEQUATE, USE CONTINUATION PAGE)			
<ol style="list-style-type: none"> <li>1. Dr. Yu has completed the testing of a new multichannel Raman system which proves to be ideally suited for hemeprotein and cataract research.</li> <li>2. Dr. Yu continued to supervise the reserach of two postdoctoral associates, one graduate student, and one research specialist, and to collaborate on research with Professor John F. R. Kuck of Emory University, School of Medicine.</li> </ol>			
<u>Service in an advisory capacity:</u>			
<ol style="list-style-type: none"> <li>1. Consultant to Government of Republic of China on Biomedical Research, National Reconstruction Committee, July 1 - Aug. 2, 1979.</li> <li>2. Consultant to laser Raman project at National Tsing-Hua University, Shinchu, Taiwan, R.O.C.</li> </ol>			
<u>Outside lectures and seminars:</u>			
<ol style="list-style-type: none"> <li>1. Kiwanis Club, "Human Cataractogenesis", July 21, 1979, East Point, GA.</li> <li>2. Oakland University, Institute of Biological Sciences, "Biological Applications of Laser Raman Spectroscopy", March 12, 1980.</li> <li>3. "Multichannel-Detected Resonance Raman Spectra of Manganese Myoglobin and Its Azide Complex", VIIth International Conference on Raman Spectroscopy, Ottawa, Canada, 1980.</li> </ol>			
<u>Publications:</u>			
<ol style="list-style-type: none"> <li>1. Nai-Teng Yu, C. C. Askren and John F. R. Kuck, Jr. "Effects of Aging on Sulfhydryl Profiles along the Visual Axis of Human, Rabbit, Chicken and Rat Lens" Exp. Eye Res. (to be submitted).</li> <li>2. Nai-Teng Yu and M. Tsubaki "Resonance Raman Spectra of Manganese Myoglobin and Its Azide Complex. Assignment of a New Charge-Transfer Band to Azide (<math>\pi</math>) <math>\rightarrow</math> Porphyrin (<math>\pi^*</math>) Transition", Biochemistry (submitted).</li> <li>3. Nai-Teng Yu and R. B. Srivastava, "Resonance Raman Spectroscopy of Heme Proteins with Intensified Vidicon Detectors: Studies of Low Frequency Modes and Excitation Profiles in Cytochrome <u>c</u> and Hemoglobin" J. Raman</li> </ol>			

Spectrosc. (in press).

4. M. Tsubaki, R. B. Srivastava and Nai-Teng Yu, "Resonance Raman Studies of Azide Binding to Myoglobin and Hemoglobin" Biochemistry, (to be submitted).
5. R. B. Srivastava, C. Pace and Nai-Teng Yu, "Comparative Raman Studies of Cytochrome  $b_{562}$  and Cytochrome  $c$ " FEBS Letts. (to be submitted).
6. C. C. Askren, Nai-Teng Yu and John F. R. Kuck, Jr., "Variation of the Concentration of Sulfhydryl along the Visual Axis of Aging Lenses by Laser Raman Optical Dissection Technique", Exp. Eye Res. 29, 647 (1979).
7. Nai-Teng Yu, John F. R. Kuck, Jr. and C. C. Askren, "Red Fluorescence in Older and Brunescant Human Lenses" Invest. Ophthal. and Vis. Sci., 18, 1278 (1979).
8. A. Lanir, Nai-Teng Yu and R. H. Felton, "Conformational Transitions and Vibronic Couplings in Acid Ferricytochrome  $c$ . A Resonance Raman Study", Biochemistry, 18, 1656 (1979).
9. A. Lanir and Nai-Teng Yu, "A Raman Spectroscopic Study of the Interaction of Divalent Metal Ions with Adenine Moiety of Adenosine 5'-Triphosphate", J. Biol. Chem., 254, 5882 (1979).



Department of Health, Education, and Welfare

Grant No. **G-33-D03**

5 K04 EY00073-03

DATE OF THIS REPORTING PERIOD

NAME AND ADDRESS OF GRANTEE INSTITUTION

TRANSACTION NO.

Georgia Institute of Technology  
Atlanta, Georgia 30332

(08) K4EY00073A

INSTITUTIONAL ID NO.

G-33-D03

FROM 7/1/78 TO 6/30/79

PROJECT PERIOD

FROM 7/1/76 TO 6/30/81

☐ CHECK IF FINAL REPORT

1. Expenditures of DHEW Funds for this Reporting Period

a. Personnel	\$ 27,999.96	h. Alterations and renovations	
b. Consultant services		i. Other Retirement	2,752.44
c. Equipment			
d. Supplies		j. Total direct costs	30,752.40
e. Travel, domestic		k. Indirect costs:	
f. Travel, foreign		Rate * % <input type="checkbox"/> S&W <input checked="" type="checkbox"/> TDC	
		Base \$ 30,752.40	2,315.16
g. Patient care costs		l. TOTAL	\$ 33,067.56

2. Expenditures from Prior Periods (previously reported)

51,856.44

3. Cumulative Expenditures

84,924.00

4. Total Amount Awarded - Cumulatively

84,924.00

5. Unexpended Balance (Item 4 less Item 3)

-0-

6. Unliquidated Obligations

-

7. Unobligated Balance (Item 5 less Item 6)

-0-

8.a. Cost Sharing Information - Grantee Contribution This Period

b. % of Total Project Costs (Item 8a divided by total of Items 1 and 8a)

%

9.a. Interest/Income (enclose check)

b. Other Refundable Income (enclose check)

10. Remarks

\* 7.5284%

I hereby certify that this report is true and correct to the best of my knowledge, and that all expenditures reported herein have been made in accordance with appropriate grant policies and for the purposes set forth in the application and award documents.

Dr. Nai-Teng Yu Assoc. Professor

Date

SIGNATURE OF INSTITUTION OFFICER

David V. Welch, Manager Grants & Contracts Acctg.

DATE

HEW-489 (REV. 10/73) 404/894-4624

REPORT OF RESEARCH GRANT  
EXPENDITURES

OMB 85R0219